

**Oribatids from Brunei IV (Acari: Oribatida).  
(*Acarologica Genavensia* CVI)**

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**Oribatids from Brunei IV (Acari: Oribatida) (*Acarologica Genavensia* CVI).** - Fifteen oribatid species are recorded from Brunei; five are new to science and for four of them a new genus (*Nasobelba* gen. n.) is established in the family Suctobelbidae. The following new combinations are proposed: *Nasobelba inenodabilis* (Hammer, 1980) comb. n. (= *Suctobelbella inenodabilis* Hammer, 1980) and *Nasobelba transitoria* (Balogh & Mahunka, 1974) comb. n. (= *Suctobelba transitoria* Balogh & Mahunka, 1974). A list of the hitherto published oribatid species of Brunei is given in addition.

**Keywords:** Acari - Oribatida - taxonomy - new genus - new species - Brunei.

INTRODUCTION

The oribatid fauna of Brunei is exceptionally rich and therefore its study extremely rewarding. In this part of the island of Borneo some restricted parts of the mountain vegetation are still well preserved and also large patches of the lowland rain forests are intact.

For this reason Dr B. Hauser, then Head of the Arthropoda Department of the Muséum d'histoire naturelle, Geneva, undertook alone a second collecting trip in 1996 to Brunei (with stops in Singapore and Hong Kong) with a focus on soil fauna. I had the opportunity to study a small part of this material and again I found many interesting species.

So far, I have published three papers discussing the oribatids living in Brunei (Mahunka 1995, 1997, 2001). Besides giving new distributional data of some rare and hardly known species (e.g. *Gehypochthonius xarifae* Strenzke, 1963, *Epilohmannoides esulcatus* Ohkubo, 1979, *Notogalumna praetiosa* Sellnick, 1959), I there described 37 new species.

In my last paper it struck me that the suctobelbid fauna of this territory is exceptionally rich. Therefore, in my new investigations, I concentrated upon this family. Five species are again new for science and four also represent a new genus

(*Nasobelba* gen. n.). The fifth species is a peculiar new species of *Parasuctobelba* Hammer, 1977. I describe the new taxa in this paper, completing them with some known species and add new distributional data. In describing the new species, I use morphological terms applied in earlier work (e.g., Mahunka & Mahunka-Papp, 2001).

A first list of the hitherto published 64 species of beetle mites from Brunei concludes this study.

#### LIST OF IDENTIFIED SPECIES

For localities see list at the end of this paper (p. 436).

##### **Phthiracaridae** Perty, 1841

*Notophthiracarus hauseri* Mahunka, 1995

Locality: SBH-96/12: 10 specimens.

Distribution: Brunei (hitherto known from the type locality only): second record for Brunei.

##### **Temburongidae** Mahunka, 1990

*Temburongia patoi* Mahunka, 1990

Localities: SBH-96/11: 3 specimens; SBH-96/12: 4 specimens.

Distribution: Sarawak, Brunei.

##### **Microtegeidae** Balogh, 1961

*Suctotegeus tumescit* Mahunka, 1987

Locality: SBH-96/12: 5 specimens.

Distribution: Sabah, Brunei: second record for Brunei.

##### **Microzetidae** Grandjean, 1936

*Teraja sungai* Mahunka, 1997

Locality: SBH-96/9: 2 specimens.

Distribution: Brunei.

##### **Damaeolidae** Grandjean, 1965

*Fosseremus laciniatus* (Berlese, 1905)

Locality: SBH-96/11: 2 specimens.

Distribution: Cosmopolitan (?); second record for Brunei.

##### **Carabodidae** C. L. Koch, 1837

*Hardybodes penicillatus* Mahunka, 1995

Locality: SBH-96/12: 3 specimens.

Distribution: Brunei.

##### **Dampfiellidae** Balogh, 1961

*Dampfiella zellwegeri* Mahunka, 1997

Locality: SBH-96/11: 3 specimens.

Distribution: Brunei (hitherto known from two localities only): second record for Brunei.

##### **Rhynchoribatidae** Balogh, 1961

*Oxymerus hauserorum* Mahunka, 1987

Localities: SBH-96/11: 3 specimens; SBH-96/12: 2 specimens.

Distribution: Sabah, Brunei: first record for Brunei.

*Suctoribates foliatus* Mahunka, 1997

Localities: SBH-96/11: 2 specimens; SBH-96/12: 5 specimens; SBH-96/15a: 3 specimens.

Distribution: Brunei (hitherto known from two localities only): second record for Brunei.

##### **Suctobelbidae** Jacot, 1938

*Condylobelba bruneiensis* Mahunka, 2001

Locality: SBH-96/12: 3 specimens.

Distribution: Brunei (hitherto known from six localities): second record for Brunei.

*Nasobelba agathis* gen. n., sp. n.

Locality: SBH-96/12.

*Nasobelba coronata* gen. n., sp. n.

Localities: SBH-96/11, SBH-96/15a.

*Nasobelba hauseri* gen. n., sp. n.

Locality: SBH-96/11.

*Nasobelba undosa* gen. n., sp. n.

Localities: SBH-96/9, SBH-96/11.

*Parasuctobelba quinquecostata* sp. n.

Locality: SBH-96/15a.

## DESCRIPTIONS OF NEW TAXA

### *Nasobelba* gen. n.

*Diagnosis:* Family Suctobelbidae. Rostral apex nasiform, following a rostral elevation, with large rostral and smaller accessory teeth. Tectopedial field reduced, paratectopedial field absent. Lamellar knob present, prebothridial rib mostly absent, or reduced. Bothridial lobe present, interbothridial field often reduced. Sensillus with a conspicuously long peduncle. Two pairs of notogastral condyles fusing to one pair of large apophyses in the sejugal region. Polygonal pattern on notogaster and ventral plate. Sternal apodemes more or less reduced, epimeral fields not touching medially. Epimeral setal formula: 3 – 1 – 3 – 3. Anogenital setal formula: 6 – 1 – 2 – 3. Setae  $ad_1$  in paraanal position.

*Type species:* *Nasobelba agathis* sp. n.

*Remarks:* Hammer (1980) already drew the attention to the difficult generic placement of *Suctobelbella inenodabilis* from Java. She also properly placed *Suctobelba transitoria* Balogh & Mahunka, 1974 in the same species group. I relegate both species to this new genus: *Nasobelba inenodabilis* (Hammer, 1980) **comb. n.** and *Nasobelba transitoria* (Balogh & Mahunka, 1974) **comb. n.**

The new genus is well characterised by the somewhat sclerotised anteromedian part of the prodorsum, the form of the sensillus, the peculiar pattern on the notogaster and ventral plate, and the position of the adanal setae. It seems to be related to the genus *Fenestrobella* Balogh, 1970, however, the new genus is distinguishable from *Fenestrobella* by the presence of its tectopedial field and lamellar knob, by the form of sensillus, the pattern on the surfaces and by the large rostral tooth, which is missing in *Fenestrobella* (Balogh, 1970; Balogh & Balogh, 1992).

*Derivatio nominis:* Named after the form of the rostral apex.

### *Nasobelba agathis* sp. n.

Figs 1-6

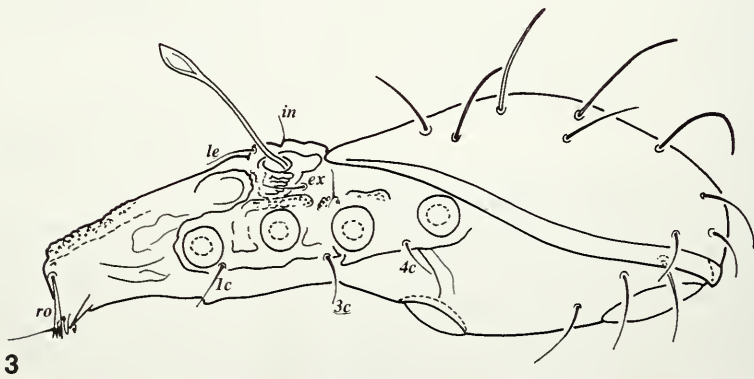
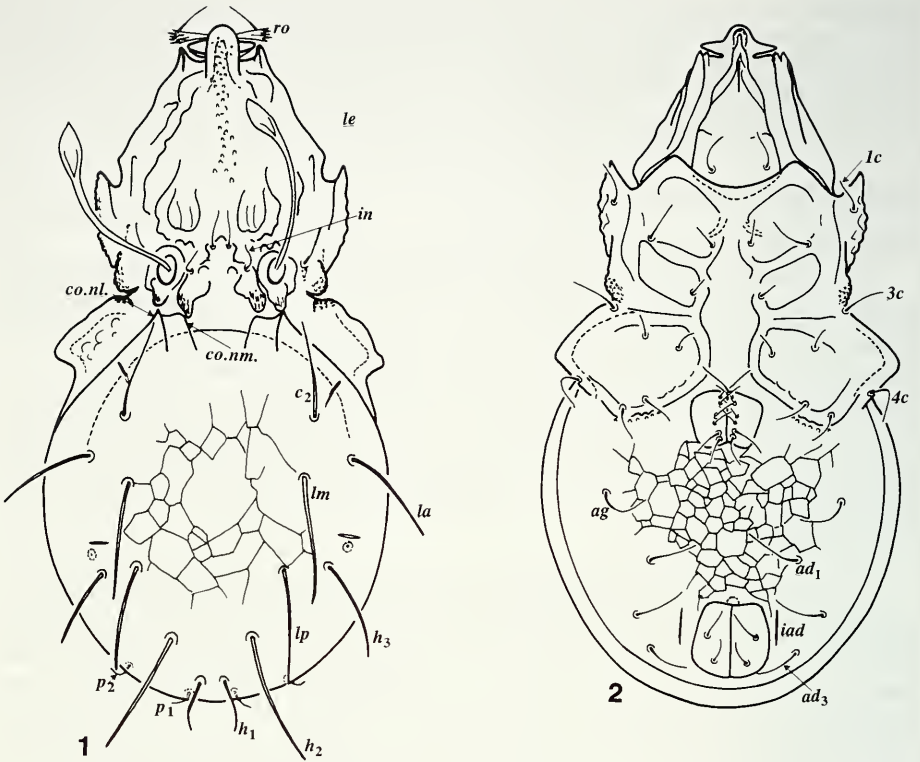
*Material examined:* Brunei: Holotype: SBH-96/12, 2 paratypes from the same sample. Holotype and 1 paratype: MHNG<sup>1</sup>, 1 paratype: (1664-PO-02) HNHM<sup>2</sup>.

*Diagnosis:* Rostral apex nasiform, well protruding, rostral tooth large. Anterior part of prodorsum with small tubercles arranged in longitudinal rows. Head of the sensillus symmetric. Notogastral condyles partly separated from each other. Median part of the notogaster and the ventral plate with polygonal pattern. Nine pairs of long and simple notogastral setae, setae  $h_1$  much shorter than  $h_2$ .

*Measurements:* Length of body: 245-267  $\mu\text{m}$ , width of body: 110-114  $\mu\text{m}$ .

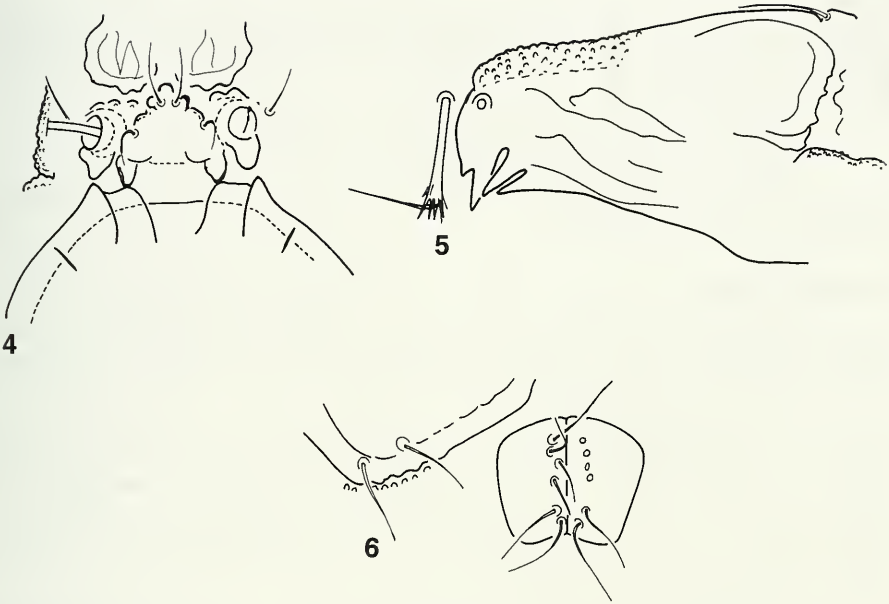
<sup>1</sup> MHNG = deposited in the Muséum d'histoire naturelle, Geneva.

<sup>2</sup> HNHM = deposited in the Hungarian Natural History Museum, Budapest, with the identification number of the specimens in the Collection of Arachnida.



FIGS 1-3

*Nasobelba agathis* gen. n., sp. n. — 1, body in dorsal view; 2, body in ventral view; 3, body in lateral view.



FIGS 4-6

*Nasobelba agathis* gen. n., sp. n. – 4, basal part of prodorsum; 5, rostrum in lateral view; 6, genital region.

*Prodorsum*: Rostral apex strongly protruding, nasiform. Rostral teeth larger than the 2 equally long accessory teeth. Rostral elevation well separated, surface with small tubercles posteriorly, arranged in longitudinal column. Tectopedial fields comparatively small, located posteriorly, near to bothridium (Fig. 1). Paratectopedial field reduced, only a small part visible anteriorly, therefore anterior part of prodorsum nearly smooth. Lamellar knob normally developed, interbothridial field well developed basally, along the bothridial lobe (Fig. 4). Rostral setae geniculate, lamellar and interlamellar setae short, simple. Sensillus very long, its head symmetrical, widely lanceolate.

*Lateral part of podosoma*: Lateroprodorsal pattern absent. Rostral elevation rising from the prodorsal surface, well tuberculate or granulate (Fig. 5). Exobothridial region (Fig. 3) well sclerotised.

*Notogaster*: Lateral notogastral condyles fused with the median ones, but their original form observable (Fig. 1). Typical polygonal pattern seen on the middle part of the notogaster. Among the fields observable are also larger ones. Nine pairs of long and simple notogastral setae,  $c_2$  narrower than  $la$  and  $ms$ . Setae  $h_1$  much shorter than  $h_2$ . Setae  $p_1$  and  $p_2$  minute.

*Ventral parts* (Fig. 2): Epimeres located far from each other, sternal apodeme absent, there is a wide sternal field in this region. Epimeral setal formula: 3 – 1 – 3 – 3. All setae well developed, comparatively long. Some tubercles present along the posterior epimeral borders. Ventral plate with well developed polygonal pattern reaching over to the anal plates posteriorly, but absent laterally. Anogenital setal

formula: 6 – 1 – 2 – 3. Anterior and posterior genital setae are longer than those in the middle part of the genital plates (Fig. 6). Aggenital setae located laterally, much farther from each other than the adanal setae. Setae  $ad_1$  in paraanal position, all setae in this region long. Lyrifissure *iad* conspicuously long.

*Legs:* Trochanter III and IV and all femora granulate.

*Remarks:* See *Nasobelba undosa* sp. n.

*Derivatio nominis:* Named after the *Agathis* (Araucariaceae) forest in Brunei. The name is a noun in apposition.

***Nasobelba coronata* sp. n.**

Figs 7-11

*Material examined:* Brunei: Holotype: SBH-96/11, 11 paratypes from the same sample and 2 paratypes: SBH-96/15a. Holotype and 8 paratypes deposited in MHNG, 2 paratypes in HNHM (1665-PO-02).

*Diagnosis:* Rostral apex nasiform, fused with a plate bearing small median teeth, these teeth reaching over the apex. Rostral teeth very large. Anterior part of prodorsum with a few small irregularly arranged tubercles. Head of the sensillus asymmetric. Notogastral condyles completely fused. Median part of notogaster and the ventral plate with irregular pattern. Nine pairs of notogastral setae,  $h_1$  and  $h_2$  equal in length. Anal plates granulate medially.

*Measurements:* Length of body: 198-211  $\mu\text{m}$ , width of body: 104-112  $\mu\text{m}$ .

*Prodorsum:* Rostral apex seems to be very wide, true nasiform apex hardly observable. The apices of the anteromedian teeth, bearing the rostral plate and the rostral teeth, form a wide, crown-shaped anterior margin (Fig. 11). Rostral elevation weakly developed, only with some, 2-3, small tubercles. Outer margin of the tectopedial field conspicuously long (Fig. 7), a weak paratectopedial field observable anteriorly. Lamellar knob well developed, located basally between the bothridia. Rostral setae geniculate, lamellar setae very long, robust. Interbothridial setae short, directed backwards. Sensillus very long, its head asymmetrical.

*Lateral part of podosoma:* Lateroprodorsal pattern conspicuous, polygonal (Fig. 10). Exobothridial region well sclerotised.

*Notogaster:* Notogastral condyles fused, seem to be one pair condyles with two apices each. Notogastral pattern small, located medially, formed of irregular lines (Fig. 7). Nine pairs of notogastral setae, their ratio different from the previous species. Setae  $h_1$  slightly shorter than  $h_2$ , but longer than  $h_3$ . Setae  $p_1$  and  $p_2$  short, but not minute.

*Ventral parts:* Basically similar to the preceding species but the epimeral setae longer (Fig. 8), setae *1b* particularly long. Setae *4a* and *4b* arising very near to each other. Along the posterior epimeral border a line of small tubercles present, a pile of secretions observable behind them. Ventral plate with a region of interconnecting lines just posterior to genital plates. Anogenital setal formula: 6 – 1 – 2 – 3. The position of setae also similar to that of the preceding species. Surface of anal plates granulate, the granules form an elliptical pattern (Fig. 9).

*Legs:* Similar to the preceding species.

*Remarks:* See *Nasobelba undosa* sp. n.

*Derivatio nominis:* Named after the shape of the structure in the rostral region.



FIGS 7-11

*Nasobelba coronata* gen. n., sp. n. – 7, body in dorsal view; 8, body in ventral view; 9, anal plates; 10, podosoma in lateral view; 11, rostral part of prodorsum.

*Nasobelba hauseri* sp. n.

Figs 12-16

*Material examined:* Brunei: Holotype: SBH-96/11, 2 paratypes from the same sample. Holotype and 1 paratype deposited in MHNG, 1 paratype in HNHM (1666-PO-02).

*Diagnosis:* Rostral apex wide, rostral and 2 pairs of accessory teeth nearly equal. Surface of prodorsum without tubercles. Head of the sensillus symmetric, narrow. Notogastral condyles fused. Whole surface of notogaster and ventral plate with a dense polygonal pattern. Nine pairs of very long notogastral setae,  $h_1$  shorter than  $h_2$ . Anal plates smooth.

*Measurements:* Length of body: 232-237  $\mu\text{m}$ , width of body: 118-122  $\mu\text{m}$ .

*Prodorsum:* Rostral apex nasiform. Rostral teeth large, accessory teeth of equal length (Fig. 14). Rostral elevation separated, its surface smooth. Tectopedial fields comparatively small, located posteriorly near to the bothridium (Fig. 12). Paratectopedial field reduced, only a small part visible anteriorly. Lamellar knob weakly developed, its anterior border opened or absent and seemingly consisting of two parts. Interbothridial field weakly developed, its posterior margins and the same part of the basal lobe finely granulate. Rostral setae geniculate, lamellar setae long, interlamellar setae short, simple. Sensillus very long, its head symmetrically lanceolate, narrow.

*Lateral part of podosoma:* Lateroprodorsal pattern absent. Rostral elevation rising from the prodorsal surface, smooth. Exobothridial region well sclerotised (Fig. 16).

*Notogaster:* Lateral notogastral condyles fused with the median ones, both apices rounded anteriorly. Notogastral pattern covering nearly the entire surface, polygonal, consisting of mostly small fields. Nine pairs of notogastral setae, some of them very long, their distal ends mostly curved (Fig. 12). Setae  $c_2$  much shorter than  $la$  and  $ms$ . Setae  $h_1$  not shorter than  $h_2$ . Setae  $p_1$  and  $p_2$  comparatively long.

*Ventral parts* (Figs 13): Similar to the preceding species, epimeres located far from each other, sternal apodeme absent. Epimeral setal formula: 3 - 1 - 3 - 3. All setae well developed, comparatively long. The posterior epimeral borders with some tubercles (Fig. 15). Ventral plate with well developed polygonal pattern reaching to the anal plates. Anogenital setal formula: 6 - 1 - 2 - 3. Anterior and posterior genital setae longer than those in the middle part of the genital plates. Aggenital setae located laterally, much farther from each other than the adanal setae. Setae  $ad_1$  in paraanal position, all setae in this region long. Lyrifissure *iad* long.

*Remarks:* See *Nasobelba undosa* sp. n.

*Derivatio nominis:* I dedicate the new species to my friend, Dr B. Hauser (Muséum d'histoire naturelle, Geneva), the collector of this very interesting material.

*Nasobelba undosa* sp. n.

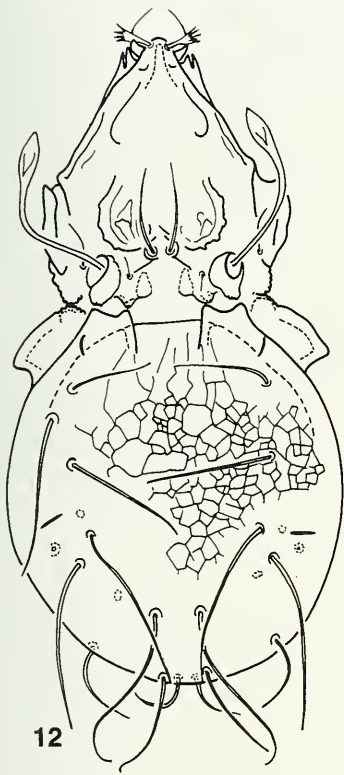
Figs 17-20

*Material examined:* Brunei: Holotype: SBH-96/9, 1 paratype SBH-69/11. Holotype deposited in MHNG, paratype in HNHM (1667-PO-02).

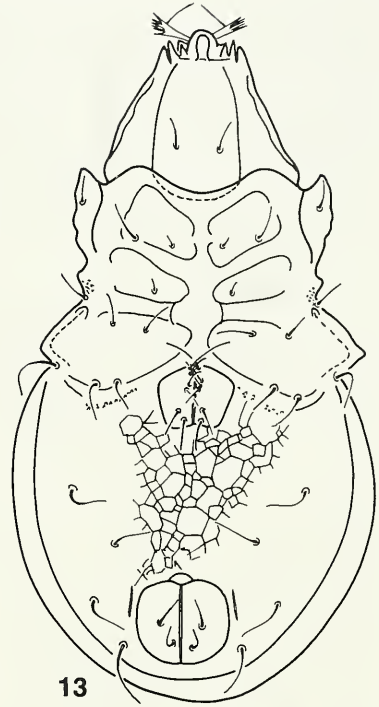
*Diagnosis:* Rostral apex nasiform, well protruding, rostral tooth large. Anterior part of prodorsum with irregular small tubercles. Peduncle of sensillus very long, curved, head of the sensillus symmetric. Surface of notogaster and the ventral plate with an irregular polygonal pattern. Nine pairs of long and flagellate notogastral setae,  $p_1$  and  $p_2$  short, simple.

*Measurements:* Length of body: 242-247  $\mu\text{m}$ , width of body: 133-141  $\mu\text{m}$ .

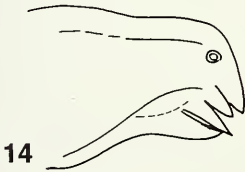




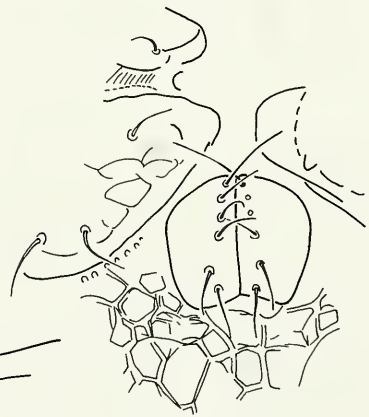
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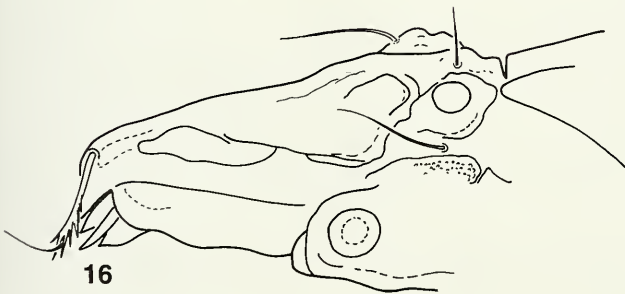
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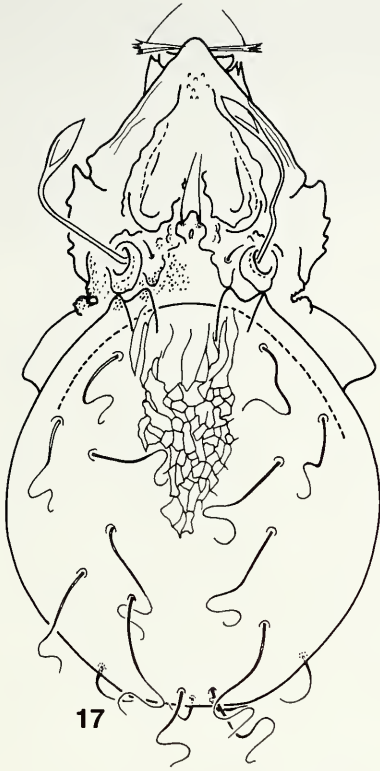
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FIGS 12-16

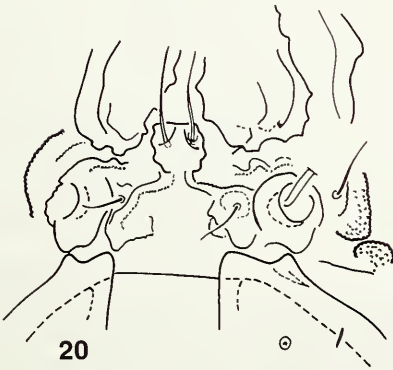
*Nasobelba hauseri* gen. n., sp. n. – 12, body in dorsal view; 13, body in ventral view; 14, rostrum in lateral view; 15, genital region; 16, podosoma in lateral view.



17



18



20



19

FIGS 17-20

*Nasobelba undosa* gen. n., sp. n. – 17, body in dorsal view; 18, body in ventral view; 19, genital region; 20, basal part of prodorsum.

*Prodorsum*: Rostral apex strongly protruding, nasiform. Rostral teeth large, accessory teeth much narrower. Rostral parts with some irregular small tubercles. Tectopedial fields comparatively large, their inner margin observable (Fig. 17). Paratectopedial field reduced, only a small part visible anteriorly. Basal part of the prodorsum distinctly covered by fine granules. Lamellar knob normally developed, some tubercles or short crests present along it (Fig. 20). Interbothridial field weakly developed basally, along the bothridial lobe. Rostral setae geniculate, lamellar and interlamellar setae normal or short, simple. Sensillus with very long peduncle, its head symmetrically lanceolate, narrow.

*Lateral part of prodorsoma*: Lateroprodorsal pattern absent. Rostral elevation rising from the prodorsal surface. Exobothridial region well sclerotised.

*Notogaster*: Lateral notogastral condyles fused with the median ones, their original form still observable (Fig. 17). Typical polygonal pattern reaching to the sejugal margin anteriorly. There are long small fields medially, their borders mostly curved. Nine pairs of long, flagellate notogastral setae,  $c_2$  shorter than  $la$  and  $ms$ . Setae  $h_1$  longer than  $h_2$ . Setae  $p_1$  and  $p_2$  also short.

*Ventral parts* (Fig. 18): Similar to the other species. Epimeres located far from each other, sternal apodeme absent. All epimeral setae well developed, comparatively long. Surface of the posterior epimeres covered by fine granules. Along the posterior epimeral borders some small tubercles present, continuing in lines (Fig. 19). Ventral plate with well developed polygonal pattern reaching the anal plates posteriorly. Lateral surface also covered by minute granules. Anogenital setal formula: 6 – 1 – 2 – 3. Anterior and posterior genital setae are longer than those in the middle part of the genital plates. Aggenital setae located much more medially than in the preceding species. Anal setae located in the posterior part of the anal plates. Setae  $ad_1$  in paraanal position, all setae in this region long. Lyrifissure *iad* conspicuously long.

*Derivatio nominis*: Named after the form of the notogastral setae.

*Remarks*: The genus *Nasobelba* gen. n. comprises 6 species, all from the Oriental Region. The four new species are well characterizable and distinguished from the previously known species by the form of the sensillus and the notogastral setae of different lengths, and the composition of the notogastral and ventral pattern or the shape of the prodorsal structures.

All six species can be distinguished by using the following key:

- 1 Rostral apex crown-shaped, with small teeth medially. Notogastral surface with irregular pattern . . . . . *coronata* sp. n.
- Rostral apex nasiform, without small teeth. Notogastral surface with polygonal pattern . . . . . 2
- 2 Prodorsal surface with small tubercles medially. Setae  $h_1$  much shorter than  $c_2$  . . . . . 3
- Prodorsal surface smooth. Setae  $h_1$  and  $c_2$  nearly equal in length . . . . . 4
- 3 Prodorsal tubercles arranged in a longitudinal column. Notogastral setae rather shorter,  $lp$  shorter than the distance between them . . . . . *agathis* sp. n.
- Prodorsal tubercles irregular. Notogastral setae rather longer,  $lp$  longer than the distance between them . . . . . *transitoria* (Balogh & Mahunka, 1974) comb. n.

- 4 Lamellar knob opened anteriorly. Posterior part of the interbothridial field and bothridial lobe finely granulated . . . . . *hauseri* sp. n.  
 - Lamellar knob normal, closed anteriorly. Posterior part of the interbothridial field and bothridial lobe smooth, or the entire basal surface granulated . . . . . 5  
 5 Notogastral setae flagellate . . . . . *undosae* sp. n.  
 - Notogastral setae normal . . . . . *inenodabilis* (Hammer, 1980) comb. n.

*Parasuictobelba quinquecostata* sp. n.

Figs 21-23

*Material examined:* Brunei: Holotype: SBH-96/15a, 6 paratypes from the same sample. Holotype and 4 paratypes deposited in MHNG, 2 paratypes in MHNG, 2 paratypes in HNHM (1668-PO-02).

*Diagnosis:* Rostrum wide, conical, without teeth or incisures. Lamellar knob long. Sensillus clavate. Bothridium large and wide. Two pairs of sejugal condyles, their median part connected with each other. Five thick, longitudinal crests present, median one longer than the lateral crest. Ten pairs of short notogastral setae. Posterior border of the epimeral region with digitiform extensions and tubercles. Anogenital setal formula: 5 - 1 - 2 - 3.

*Measurements:* Length of body: 159-170  $\mu\text{m}$ , width of body: 91-100  $\mu\text{m}$ .

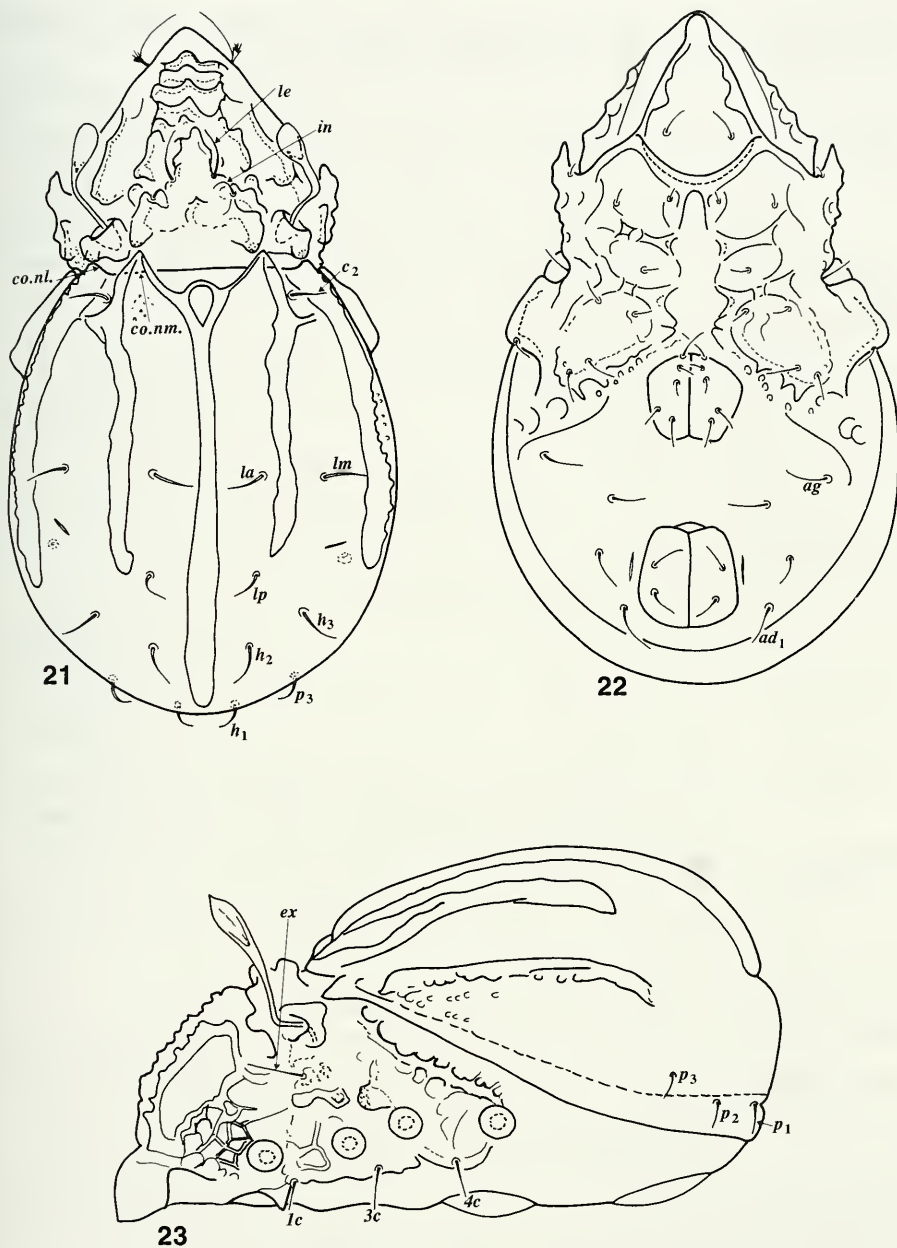
*Prodorsum:* Rostrum conical, its margin nearly smooth, neither teeth, incisures nor lobes present. There are short transversal crests with 3 sharply pointed tubercles each behind the rostrum (Fig. 22). They are connected laterally, so this border and a longitudinal lateral strong crest form a pair of fields, appearing to be paratectopedial fields. True tectopedial field absent. Lamellar knob elongated. Interbothridial field with a well sclerotised basal part. Rostral setae geniculate, lamellar setae simple, interlamellar ones short, curved. Sensillus club-shaped.

*Lateral part of podosoma:* Well developed polygonate lateroprodorsal pattern present. Exobothridial region well sclerotised, partly granulated. Above the acetabula a strong lath running anteriorly from acetabula IV (Fig. 23).

*Notogaster:* Two pairs of sharply pointed, interconnected notogastral condyles present. Two pairs of shorter lateral costulae and one unpaired, long median costula present, they are thick and rise well out from the surface (Fig. 21). The lateral ones with tubercles, some tubercles also existing along the anterolateral margin. Median costula also connected with the lateral ones and bearing a cordiform cavity anteriorly. 10 pairs of short, nearly spiniform notogastral setae present, two posterior ones observable only in lateral view (Fig. 23).

*Ventral parts:* Sternal apodeme absent, epimeres not touching medially, a wide sternal field exist between them. Posterior border of the epimeral region with a peculiar structure bearing some digitiform expansions and behind them some large tubercles (Fig. 22). Some large alveoli observable laterally. Epimeral setal formula: 3 - 1 - 3 - 3, all epimeral setae simple and short. Anogenital setal formula: 5 - 1 - 2 - 3. Aggenital setae located near to the lateral margin of the ventral plate, far from each other. Adanal setae equal in length, setae  $ad_1$  in paraanal position. Lyrifissures *iad* long.

*Remarks:* On the basis of the shape of the prodorsum and the peculiar notogastral structure, the new species without doubt belongs to the genus *Parasuictobelba*



FIGS 21-23

*Parasuctobelba quinquecostata* sp. n. – 21, body in dorsal view; 22, body in ventral view; 23, body in lateral view.

Hammer, 1977. The new species is distinguishable from the known species by the five long costulae, which are absent in the other species.

*Derivatio nominis*: Named after the structure of the notogaster.

## CHECK-LIST OF THE HEREWITH PUBLISHED ORIBATID SPECIES OF BRUNEI, WITH COMPLETE LIST OF LOCALITIES

This check-list contains the bibliographic references and all data concerning the collecting localities. To make it more effective for ecological and biogeographical purposes, the complete locality-list gives the possibility to decode all published localities.

### **Eniochthoniidae** Grandjean, 1947

1. *Eniochthonius sumatranus* (Mahunka, 1989) — Mahunka, 1997: Bru-88/41.

### **Gehypochthoniidae** Strenzke, 1963

2. *Gehypochthonius xarifae* Strenzke, 1963 — Mahunka, 1997: Bru-88/41.

### **Parhypochthoniidae** Grandjean, 1932

3. *Parhypochthonius asiaticus* Mahunka, 1997 — Mahunka, 1997: Bru-88/41.

### **Brachychthoniidae** Thor, 1934

4. *Sellnickochthonius muara* Mahunka, 1995 — Mahunka, 1995: Bru-88/12; Bru-88/24.
5. *Sellnickochthonius planus* (Chinone, 1974) — Mahunka, 1995: Bru-88/24.

### **Phthiracaridae** Perty, 1841

6. *Hoplophthiracarus (Plonaphacarus) aculeatus* Mahunka, 1995 — Mahunka, 1995: Bru-88/38; Mahunka, 1997: Bru-88/46.
7. *Notophthiracarus hauseri* Mahunka, 1995 — Mahunka, 1995: Bru-88/21; Mahunka, 2005: SBH-96/12.

### **Synichotritiidae** Walker, 1965

8. *Sabahritia lienhardi* Mahunka, 1995 — Mahunka, 1995: Bru-88/29; Mahunka, 2001: Bru-88/32.

### **Temburongiidae** Mahunka, 1990

9. *Temburongia patoi* Mahunka, 1990 — Mahunka, 1990 and Mahunka, 1995: Bru-88/21, Bru-88/38, Mahunka, 1997: Bru-88/41, Bru-88/46; Mahunka, 2001: Bru-88/29, Bru-88/38; Mahunka, 2005: SBH-96/11, SBH-96/12.

### **Epilohmanniidae** Oudemans, 1923

10. *Epilohmannia nortoni* Mahunka, 1997 — Mahunka, 1997: Bru-88/29, Bru-88/41, Bru-88/46.
11. *Epilohmannoides esulcatus* Ohkubo, 1979 — Mahunka, 1997: Bru-88/29, Bru-88/41, Bru-88/46.

### **Lohmanniidae** Berlese, 1916

12. *Papillacarus lienhardi* Mahunka, 1997 — Mahunka, 1997: Bru-88/29.

### **Hermanniellidae** Grandjean, 1934

13. *Bruneiella sultan* Mahunka, 1997 — Mahunka, 1997: Bru-88/41, Bru-88/46.

### **Microtegeidae** Balogh, 1961

14. *Microtegeus sabahnus* Mahunka, 1987 — Mahunka, 1997: Bru-88/21, Bru-88/41.
15. *Suctotegeus tumescitus* Mahunka, 1987 — Mahunka, 1997: Bru-88/41, Mahunka, 2005: SBH-96/12.

### **Eremaeozetidae** Balogh, 1972

16. *Eremaeozetes maculosus* Mahunka, 1995 — Mahunka, 1995: Bru-88/24.

### **Microzetidae** Grandjean, 1936

17. *Anakingia borneensis* Mahunka, 1997 — Mahunka, 1997: Bru-88/41.
18. *Teraja asymmetrica* Mahunka, 2001 — Mahunka, 2001: Bru-88/38.
19. *Teraja sungai* Mahunka, 1997 — Mahunka, 1997: Bru-88/41, Bru-88/46; Mahunka, 2001: Bru-88/35; Mahunka, 2005: SBH-96/9.
20. *Teraja tuberculata* (Mahunka, 1987) — Mahunka, 2001: Bru-88/35.
21. *Teraja wongi* Mahunka, 1995 — Mahunka, 1995: Bru-88/32; Mahunka, 1997: Bru-88/29; Mahunka, 2001: Bru-88/32.

**Damaeolidae** Grandjean, 1965

22. *Fosseremus laciniatus* (Berlese, 1905) — Mahunka, 2001: Bru-88/12; Mahunka, 2005: SBH-96/11.

**Eremobelbidae** Balogh, 1961

23. *Eremobelba porcella* Mahunka, 2001 — Mahunka, 2001: Bru-88/21, Bru-88/24.

**Peloppiidae** Balogh, 1943

24. *Austroceratoppia serapi* Mahunka, 1996 — Mahunka, 2001: Bru-88/29.

**Carabodidae** C. L. Koch, 1837

25. *Congocephus orientalis* Mahunka, 1987 — Mahunka, 1997: Bru-88/41.  
 26. *Gymnobodes semengok* Mahunka, 1996 — Mahunka, 2001: Bru-88/35.  
 27. *Hardybodes flabellatus* Mahunka, 1995 — Mahunka, 1995: Bru-88/21, Bru-88/32, Bru-88/38; Mahunka, 1997: Bru-88/41.  
 28. *Hardybodes penicillatus* Mahunka, 1995 — Mahunka, 1995: Bru-88/35; Mahunka, 2001: Bru-88/24; Mahunka, 2005: SBH-96/12.  
 29. *Pasocephus eremaeozetoides* Mahunka, 1995 — Mahunka, 1995: Bru-88/32.

**Tectocephidae** Grandjean, 1954

30. *Tegeozetes tunicatus* Berlese, 1913 — Mahunka, 2001: Bru-88/32, Bru-88/38.

**Otocephidae** Balogh, 1961

31. *Dolicheremaeus andulauensis* Mahunka, 1997 — Mahunka, 1997: Bru-88/41, Bru-88/46; Mahunka, 2001: Bru-88/24.  
 32. *Dolicheremaeus bruneiensis* Aoki, 1967 — Aoki, 1967: Brunei City, 21.I.1962.  
 33. *Dolicheremaeus furcillatus* Mahunka, 1997 — Mahunka, 1997: Bru-88/21, Bru-88/46.  
 34. *Dolicheremaeus wallacei* Mahunka, 1997 — Mahunka, 1997: Bru-88/29, Bru-88/46.  
 35. *Otocephus durian* Mahunka, 1997 — Mahunka, 1997: Bru-88/46.

**Dampfiellidae** Balogh, 1961

36. *Dampfiella zellwegeri* Mahunka, 1997 — Mahunka, 1997: Bru-88/21, Bru-88/46; Mahunka, 2005: SBH-96/11.

**Luxtoniidae** Mahunka, 2001

37. *Luxtonia hauseri* Mahunka, 2001 — Mahunka, 2001: Bru-88/35.

**Oppiidae** Grandjean, 1951

38. *Arcoppia teraja* Mahunka, 2001 — Mahunka, 2001: Bru-88/21, Bru-88/32.  
 39. *Corynoppia andulau* Mahunka, 2001 — Mahunka, 2001: Bru-88/21.  
 40. *Graptoppia sundensis* (Hammer, 1980) — Mahunka, 2001: Bru-88/21, Bru-88/35.  
 41. *Karenella bruneiana* Mahunka, 2001 — Mahunka, 2001: Bru-88/21, Bru-88/46.  
 42. *Oppiella nova* (Oudemans, 1902) — Mahunka, 2001: Bru-88/24, Bru-88/32, Bru-88/35.  
 43. *Ptiloppia lienhardi* Mahunka, 2001 — Mahunka, 2001: Bru-88/21, Bru-88/32, Bru-88/35.  
 44. *Pulchroppia burckhardti* Mahunka, 1987 — Mahunka, 2001: Bru-88/35.  
 45. *Senectoppia kerangas* Mahunka, 2001 — Mahunka, 2001: Bru-88/32.

**Rhynchoribatidae** Balogh, 1961

46. *Oxymerus hauserorum* Mahunka, 1987 — Mahunka, 2005: SBH-96/11, SBH-96/12.  
 47. *Suctoribates foliatus* Mahunka, 1997 — Mahunka, 1997: Bru-88/29, Bru-88/41; Mahunka, 2005: SBH-96/11, SBH-96/12, SBH-96/15a.

**Suctobelbidae** Jacot, 1938

48. *Bruneibelba separata* Mahunka, 2001 — Mahunka, 2001: Bru-88/21, Bru-88/35.  
 49. *Bruneibelba tuberosa* Mahunka, 2001 — Mahunka, 2001: Bru-88/35.  
 50. *Coartobelba pauper* Mahunka, 2001 — Mahunka, 2001: Bru-88/21, Bru-88/29, Bru-88/41, Bru-88/46.  
 51. *Condylobelba agathis* Mahunka, 2001 — Mahunka, 2001: Bru-88/21, Bru-88/29, Bru-88/35, Bru-88/46.  
 52. *Condylobelba bruneiensis* Mahunka, 2001 — Mahunka, 2001: Bru-88/21, Bru-88/24, Bru-88/29, Bru-88/35, Bru-88/41, Bru-88/46; Mahunka, 2005: SBH-96/12.

53. *Condylobelba sculpturata* Mahunka, 2001 — Mahunka, 2001: Bru-88/35.  
 54. *Nasobelba agathis* Mahunka, 2005 — Mahunka, 2005: SBH-96/12.  
 55. *Nasobelba coronata* Mahunka, 2005 — Mahunka, 2005: SBH-96/11, SBH-96/15a.  
 56. *Nasobelba hauseri* Mahunka, 2005 — Mahunka, 2005: SBH-96/11.  
 57. *Nasobelba undosa* Mahunka, 2005 — Mahunka, 2005: SBH-96/9, SBH-96/11.  
 58. *Parasuctobelba quinquecostata* Mahunka, 2005 — Mahunka, 2005: SBH-96/15a.  
 59. *Suctobelbella subcomplexa* (Balogh & Mahunka, 1968) — Mahunka, 2001: Bru-88/21, Bru-88/41.  
 60. *Suctobelbella variosetosa* (Hammer, 1961) — Mahunka, 2001: Bru-88/35, Bru-88/38, Bru-88/46.

#### Haplozetidae Grandjean, 1936

61. *Bolkiah hauseri* Mahunka, 1997 — Mahunka, 1997: Bru-88/41; Bru-88/46.  
 62. *Borneozetes lanceolatus* Mahunka, 1997 — Mahunka, 1997: Bru-88/29.

#### Oribatellidae Jacot, 1925

63. *Lamellobates orientalis* Csiszár, 1961 — Mahunka, 2001: Bru-88/35.

#### Galumnidae Jacot, 1925

64. *Notogalumna praetiosa* Sellnick, 1959 — Mahunka, 2001: Bru-88/24.

#### LIST OF LOCALITIES FOR ALL PUBLISHED RECORDS (EXPEDITIONS OF 1988 AND 1996)

##### 1988

- Bru-88/12: **Brunei** (Brunei-Muara District): près du pont sur le ruisseau "Sungai Lubang Baru" sur la route venant de Tutong, à 33 km de Bandar Seri Begawan, prélèvement de sol dans les angles formés par les contreforts de deux grands arbres proches des habitations, env. 20 m; 16.XI.1988; leg. B. Hauser — (extraction par appareil Berlese à Bandar Seri Begawan, Brunei).
- Bru-88/21: **Brunei** (Belait District): "Andulau Forest ("Mixed dipterocarp forest"), K-7 ("Kompartement 7"), prélèvement de sol dans les angles formés par les contreforts de grands arbres, 50 m; 19.XI.1988; leg. B. Hauser — (extraction par appareil Berlese à Bandar Seri Begawan, Brunei).
- Bru-88/24: **Brunei** (Brunei-Muara District): "Berakas Forest Reserve" au nord de Bandar Seri Begawan sur la route, à 19,5 km de Muara (= à 102,5 km de Kuala Belait), forêt "Kerangas" (= "Tropical heath forest"), prélèvement de sol au pied de *Casuarina nobilis* Whitmore (Casuarinaceae), 30 m; 20.XI.1988; leg. B. Hauser — (extraction par appareil Berlese à Bandar Seri Begawan, Brunei).
- Bru-88/29: **Brunei** (Belait District): Sungai Liang, "Arboretum Forest Reserve", forêt primaire ("Mixed dipterocarp forest"), prélèvement de sol dans les angles formés par les contreforts de deux arbres appelés "Nyatho", 90 m; 21.XI.1988; leg. B. Hauser — (extraction par appareil Berlese à Bandar Seri Begawan, Brunei).
- Bru-88/32: **Brunei** (Belait District): "Labi Hills Forest Reserve", "Teraja", à 42 km au sud de Sungai Liang (= 12 km au Sud de Labi), environs de "Rumah Panjang" (= Longhouse du Kampong Teraja), forêt primaire ("Mixed dipterocarp forest"), prélèvement de sol dans les angles formés par les contreforts d'un très grand arbre, 40 m; 22.XI.1988; leg. B. Hauser — (extraction par appareil Berlese à Bandar Seri Begawan, Brunei).
- Bru-88/34: **Brunei** (Belait District): "Badas Forest Reserve", à env. 10 km sur la route secondaire qui bifurque, à 32 km de Kuala Belait, vers le sud, forêt "Kerangas" (= "Tropical heath forest") formée presque exclusivement par *Agathis dammara* (Lambert) L. G. Rich. (Araucariaceae), sur et sous écorces, 10 m; 23.XI.1988; leg. B. Hauser.
- Bru-88/35: **Brunei** (Belait District): "Badas Forest Reserve", à env. 10 km sur la route secondaire qui bifurque, à 32 km de Kuala Belait, vers le sud, forêt "Kerangas" (= "Tropical heath forest") formée presque exclusivement par *Agathis dammara* (Lambert) L. G. Rich. (Araucariaceae), prélèvement de sol au pied de *Agathis dammara*, 10 m; 23.XI.1988; leg. B. Hauser — (extraction par appareil Berlese à Hong Kong).
- Bru-88/38: **Brunei** (Temburong District): "Peradayan Forest Reserve" (= "Bukit Patoi"), à 14,5 km de Bangar (= 2,5 km de Labu), forêt primaire ("Mixed dipterocarp forest"), prélèvement de sol dans les angles formés par les contreforts de grands arbres morts, 80 m; 24.XI.1988; leg. B. Hauser — (extraction par appareil Berlese à Hong Kong).



- Bru-88/41: **Brunei** (Belait District): Sungai Liang, "Arboretum Forest Reserve", forêt primaire ("Mixed dipterocarp forest"), prélèvement de sol dans les angles formés par les contreforts d'arbres appelés "Kempas" (= *Koompassia malaccensis* Maing. & Benth. [Fabaceae]), 20 m; 25.XI.1988; leg. B. Hauser — (extraction par appareil Berlese à Hong Kong).
- Bru-88/46: **Brunei** (Belait District): "Andulau Forest Reserve", à 3,5 km au sud de Sungai Liang (= à 39,5 km de Labi), forêt primaire ("Mixed dipterocarp forest"), K-8 ("Kompartment 8"), prélèvement de sol dans les angles formés par les contreforts d'un grand arbre, 70 m; 26.XI.1988; leg. B. Hauser — (extraction par appareil Berlese à Hong Kong).

## 1996

- SBH-96/9: **Brunei** (Belait District): Sungai Liang, "Arboretum Forest Reserve", forêt primaire ("Mixed dipterocarp forest"), prélèvement de sol dans les angles formés par les contreforts de *Alstonia angustiloba* Miq. (Symplocaceae), 20 m; 29.XI.1996; leg. B. Hauser — (extraction par appareil Berlese à Bandar Seri Begawan, Brunei).
- SBH-96/11: **Brunei** (Belait District): "Badas Forest Reserve", à env. 10 km sur la route secondaire qui bifurque, à 32 km de Kuala Belait, vers le S; forêt "Kerangas" (= "Tropical heath forest") formée presque exclusivement par *Agathis dammara* (Lambert) L. G. Rich. (Araucariaceae), "Genetic Resources Protection Area", prélèvement de sol au pied d'un gros *A. dammara*, 10 m; 30.XI.1996; leg. B. Hauser — (extraction par appareil Berlese à Bandar Seri Begawan, Brunei).
- SBH-96/12: **Brunei** (Belait District): "Badas Forest Reserve", à env. 10 km sur la route secondaire qui bifurque, à 32 km de Kuala Belait, vers le S; forêt "Kerangas" (= "Tropical heath forest") formée presque exclusivement par *Agathis dammara* (Lambert) L. G. Rich. (Araucariaceae) "Genetic Resources Protection Area", prélèvement de sol au pied de *A. dammara*, 10 m; 30.XI.1996; leg. B. Hauser — (extraction par appareil Berlese à Bandar Seri Begawan, Brunei).
- SBH-96/15a: **Brunei** (Belait District): "Labi Hills Forest Reserve", "Teraja", à 42 km au S de Sungai Liang (= 12 km au Sud de Labi), environs de "Rumah Panjang" (= Longhouse du Kampong Teraja), forêt primaire ("Mixed dipterocarp forest"), prélèvement de sol dans les angles formés par les contreforts de deux très grands arbres, 20 m; 2.XII.1996; leg. B. Hauser — (extraction par appareil Berlese à Bandar Seri Begawan, Brunei).

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